

Masterclass

Development and use of standardised data collection tools to support and inform musculoskeletal practice

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ABSTRACT

Clinicians all over the world are increasingly being faced with the need to demonstrate and account for the way in which clinical services are delivered and the quality of the delivery. It is also imperative to develop a comprehensive profile of who is accessing these services, who benefits from these services; how much these services cost in terms of clinicians time, the use of other healthcare resources and the effectiveness of interventions utilised in relation to quality outcomes. Clinicians are themselves keen to have mechanisms to identify what approaches are being utilised in their own practice setting, how they work best and how they can be improved from a professional development perspective. They are also anxious to improve their skills based on informed reflective practice and identify gaps in their knowledge and skills. This masterclass identifies how standardised data collection (SDC) tools can be utilised in practice to gather the information required in a robust, agreed and accessible way. It summarises a method of SDC tool development and gives some examples of how SDC has been implemented in physiotherapy National Health Services and in physiotherapy private practice in the United Kingdom. The global relevance is that increasingly all physiotherapy services are being held and will be accountable for the quality and equity of care. In addition clinicians can find it useful to have benchmarks with which to compare their own and their departmental performance in terms of clinical activities and outcomes.

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1. Introduction

All healthcare professionals record patients' clinical examination data on a routine basis (Fritz et al., 2003); however, the consistency of the records and the breadth of data recorded may be subject to considerable variation between individuals. The type of data collected usually only relates to clinical findings and is often limited in terms of patient demographics and information related to service delivery and the outcome of care. Frequently commissioners of healthcare services, professional bodies, patients, managers and practitioners themselves require information to help in decision making about a range of issues which is often unavailable; for example data needed to inform cost effectiveness. This masterclass explores the concept of standardised data collection (SDC) and describes how SDC can be successfully achieved in practice. It also explores the perceived benefits of SDC from a range of perspectives and sets out one or two examples of the process of development of an SDC tool together with examples of the derived data.

2. Definition of terms

For the purpose of this paper, we define a SDC tool as: "an agreed instrument which enables data concerning patients, therapists and/or healthcare settings and approaches to be collected unambiguously by a range of practitioners in a number of different clinical settings".

3. Context – quality of healthcare

Quality of healthcare has been defined by several authorities over the years. For example, Donabedian specified structure, process and outcome of care as the key structures on which to build a quality service (Donabedian, 1966, 1980). Donabedian's seminal work has been built on by subsequent authors in the field. For example Øvretveit (1992) who held up client quality, professional quality and management quality as the key quality attributes in healthcare. Maxwell (1984) highlighted access, relevance, effectiveness, equity, efficiency, economy and social acceptability as quality markers in healthcare. However, each new Government/Healthcare initiative appears to favour a different model and has different foci. All models however are based on the need for quality

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standards to be set and this cannot be done until baseline data is in place in the locality as a benchmark on which to set quality standards (Øvretveit, 1992).

SDC if carried out rigorously offers clinicians an excellent opportunity to show how efficient, timely and equitable their services are, and combined with validated/reliable outcomes can also give some evidence of effectiveness and all of these elements are core to healthcare quality (Institute of Medicine, 2001).

Recently a UK based document “Framing the Contribution of the Allied Health Professions Delivering High Quality Care” (Department of Health, 2008) announced the instigation of mandatory data collection in relation to referrals to Allied Health Professionals and also the need for the development of quality metrics with a proposal to increase and/or mandate the use of a small number of validated outcome measurement tools in association with mandatory data collection. This development would imply that routine SDC is here to stay in the UK and in fact is growing in momentum.

SDC is a significant way of gathering data to best effect to ensure standard setting is unambiguous and the standards that are set are potentially achievable (Øvretveit, 1992). However, there are barriers to SDC including clinicians' negative attitudes towards it (Russek et al., 1997) and the need for those involved in SDC to have adequate training has also been identified (Russek et al., 1997). Russek et al. also highlighted the fact that clinical databases would grow in importance as physiotherapists need to determine their effectiveness and justify costs of treatment. The authors also identified obstacles preventing clinicians participating in SDC. The key findings were the inconvenience of data collection and the need for training in the SDC method (Russek et al., 1997). The use of SDC in sporting activities has been gaining momentum internationally in the last decade (Finch et al., 1999; Fuller et al., 2006; King et al., 2009). Momentum has also been growing in Neurological Physiotherapy (Crow and Harmeling, 2002) in chronic obstructive pulmonary disease (Jones et al., 2009), in homeopathy (Thompson et al., 2008), also in rehabilitation (Wade, 2004). The issue of SDC has been raised previously in *Manual Therapy Journal* (Moore and Jull, 2009).

A consensus methodology/a nominal group technique (NGT) was developed, piloted and described by Van de Ven and Delbecq (1972) in the USA. The purpose of the NGT process is to develop ideas/information in response to a question or issue that can then be structured/prioritised via face to face discussion of the expert panel or group with potentially five to nine participants. The group is usually facilitated by an expert in the field (Gallagher et al., 1993; Sim and Wright, 2000; Potter et al., 2004). Initiatives in the USA have utilised SDC across thousands of hospitals utilising a selection of 57 inpatient measures related to performance and also data on patients' satisfaction and outcomes. This situation has arisen since 2004 when no consensus was in place in respect of the kind of measures that would be suitable. Chassin et al. (2010) reported on the positive progress that has been made in this area, getting sign up from staff and stakeholders and also considering the need for measures to adequately reflect evidence-based practice. Their work had a strong focus on inpatient and acute myocardial infarction, heart failure, pneumonia and pregnancy.

In the last decade, SDC tools have been developed in other areas including:- the pharmaceutical industry (Wolf and Gilbert, 2002); in multi-centre studies of malaria (Taylor et al., 2006); in cardiology (Radford et al., 2007); in musculoskeletal injuries in US military personnel (Hauret et al., 2010) and in midwifery, specifically the Midwives Alliance of North America (<http://mana.org/statform.html>). All the professions who have developed and utilised SDC tools indicate the importance of data gathering to profile clinical practice and also highlight the strengths which can be gained in relation to multi-centre, multi-regional, multi-country-usage.

An interesting and thorough international study conducted by Swinkels et al. (2007) identified existing clinical databases for use in physical therapy. The authors identified only seven databases present in the USA, Australia, New Zealand, Israel and the Netherlands incorporating a range of physiotherapy specialities; however the authors included only electronic data tools in their data collection and this may have reduced considerably the numbers returned. All the electronic databases identified collected data on patient profiles, referrals, diagnoses, treatment and discharge. The purposes of the databases were summarised as “quality improvement, research, and performance management” (Swinkels et al., 2007). The authors also highlighted the great potential clinical databases have for the field of physical therapy.

This article has been written by the authors on the basis of many years of experience of SDC with the aim of increasing the understanding about the what? why? and how? of SDC and also potential benefits of its adoption into clinical practice for professional advancement, patient benefit and research management activities. The first author's work has largely taken place in the field of musculoskeletal physiotherapy in the National Health Service in the United Kingdom (Moore, 1996, 1997, 1999), and also more latterly in private physiotherapy practice settings (Moore et al., 2007). The work has also recently encompassed SDC activities within the field of osteopathy (www.brighton.ac.uk/ncor/sdc/index.htm). This work has informed SDC activity in hydrotherapy at a national level in the UK (HyDAT team, 2009). All work that has taken place has been commissioned work which is acknowledged at the end of this paper. In order to illustrate the structure, process and outcome of SDC work, a case study is presented within this article which was a project funded by the Private Practitioners Education Foundation (PPEF) and commissioned by Physio First (the Organisation for Chartered Physiotherapists in Private Practice) in the UK.

4. Methodological approach to the development of SDC tools

Gaining “agreement” concerning the tools and content of tools to be used, in all cases, has utilised consensus agreement techniques such as NGT (also known as an expert panel) or a Delphi process, but also has involved reviewing the relevant literature. Consensus methods have been described in detail previously by Fink et al. (1984) and Jones and Hunter (1995).

5. Why is SDC useful and important?

In modern society all health workers are being held to account in relation to service delivery and the outcome of service activity (Department of Health, 2008, 2010). Health services quality agendas are at the fore and all healthcare providers are expected to provide a high quality service, high quality patient experiences and of course value for money/cost effectiveness (Department of Health, 2008, 2010). Add this to the expectation of healthcare providers that practitioners will offer evidence based interventions and the issue of competition within healthcare provision, and it appears logical to suggest that the more information that individual practitioners, managers, health service providers and commissioners have access to the better. With patient centred care being of key importance it is also vital that information is available to patients in order for them to be able to make informed choices about the type of treatments on offer and other features of the service they might expect. For example, the average number of treatments that might be necessary, what modalities they might expect to receive and so on. In recent years in musculoskeletal physiotherapy the notion of patient profiling has become very popular as well as the concept of movement classification systems (O'Sullivan, 2005). In addition when research takes place and data

is required about patients' conditions and treatments it is quite common for researchers to develop a data gathering tool which clinicians/research teams will use in relation to the research taking place. This often creates an extra task to routine activities which is sometimes unprecedented in normal practice and requires new skills and more time by practitioners in order to provide the information requested. Having an SDC tool in place in routine practice which has been rigorously developed and refined can in fact reduce these perennial additional burdens. Finally, as evidence-based professions, physiotherapy and other musculoskeletal therapies like many others are still in their infancy, momentum is gathering but began with much of the baseline evidence picture missing unlike professions such as pharmacy, where evidence has to be in place before a drug is utilised. Therefore any additional baseline information that can be collected can usefully inform practice based research questions.

6. Types of data that can be collected using SDC

Data can be recorded on a variety of topics which relate to patient demographics as well as clinical findings, treatment modalities, service delivery and outcome of care. The data recorded can of course be complemented by detailed examination and assessment records and the use of valid and reliable outcome measures and patient satisfaction questionnaires.

Using the right data in the right way can provide evidence of quality of care, innovation in treatment approaches, value for money/cost effectiveness and this data can be vital in justifying the need for treatment availability or provide justification for the need for more staff and/or more resources to deliver this care. Used in other circumstances data can be used to determine whether the care delivered is conforming to evidence based guidelines.

Other more individual practitioner focussed outcomes of the use of SDC are that individual therapists can have access to their own data and can compare their data with others in their department or practice or perhaps with regional/countrywide data. This can lead to an increase in self-reflection, help to identify continuing professional development needs and generally promote discussion amongst clinical colleagues. Managers value the data as it can be used to compare the outcomes, productivity and quality of their services with those of others, and help to inform commissioning processes.

7. Historical development of SDC in musculoskeletal physiotherapy in the UK

The authors' work on SDC started in 1995 with a commission by a physiotherapy department in a hospital in the South East of England which was being asked by its funders to provide evidence of quality of service delivery and provide data for more specific uses, for example working times, referral patterns etc.

Using a staged series of focused expert discussion groups a pilot SDC tool for musculoskeletal physiotherapy services was established. A NGT (consensus approach) was used at each stage of this project. Firstly a series of structured interviews were undertaken with local managers, clinicians and patients to ascertain what topics were felt to be important as markers of treatment success, quality of service delivery and what kind of patient demographics should be collected. From these discussions a list of topics was produced for discussion with a wider group of therapists (expert group), and once agreed, criteria which would be used to complete each topic item were then developed from the literature or knowledge of the expert panel utilising the NGT. Once agreed by the panel, the tool was piloted for one month by three full time physiotherapists in each of the hospitals outpatient physiotherapy departments. Adjustments were made to the tool according to the

feedback given by the clinicians who piloted the tool. The tool was then used to collect data on the clinical activities of all physiotherapists within six outpatient physiotherapy departments in one region of the UK over a one year period. At the end of the data collection period the data was entered into a database by hand (as data had been collected for convenience in paper format) and the data was analysed and a full report produced (Moore, 1996). One of the immediate results of the publication of the report was that local commissioners increased the number of funded treatments which a patient could receive via the physiotherapy department before being referred back to their referral source e.g. GP or consultant. This substantially improved the quality of care for patients who had often been referred back to their referring agent prematurely since the number of commission treatments had been used up before full recovery had taken place. At this time the average number of treatments to discharge per patient was 5.5 (Moore, 1996).

This work was followed by two large data collection and audit projects in the South East of England involving ten musculoskeletal outpatient services looking specifically at the management of low back pain (Moore, 1997) and sixteen musculoskeletal outpatient services focussing on patients with cervical spine pain and dysfunction (Moore, 1999). The original data collection tool was adapted/refined for use by musculoskeletal physiotherapists as necessary for these projects, and also included the audit of a number of locally set clinical standards.

Building on this series of projects a one year SDC project was performed looking specifically into whiplash associated disorders across five outpatient physiotherapy departments in the South of England (Moore et al., 2006). This project provided useful data for comparison across hospitals of patient care and service delivery, and was useful in comparing actual practice with newly published guidelines for the treatment of whiplash associated disorder (Moore et al., 2005). The participating departments found this to be a very useful exercise particularly as it involved considerable dialogue between the departmental representatives and their clinical teams.

8. The development process

In developing a data collection tool for use within a practice, department or for use at national/international level, the important way forward is to enable all those who take part in the data collection to develop a sense of ownership of the data collection tool. This means that rather than imposing a tool developed in isolation in academia, a thorough process of consultation with relevant stakeholders/organisations needs to occur so that what is developed has resonance with the needs of the stakeholders especially those who will use the tool at grass roots level. An overview of the consensus SDC tool development process is depicted in Fig. 1.

If a regional, national or international data collection project is planned then the tool will need to be piloted in various hospitals/clinical settings within or across a number of regions of a country or various countries. If an international tool is desirable then cultural adjustments will need to be made to the tool as required, and this may need some considerable discussion and modification. It is very likely that one tool may not fit all depending on the nature of questions e.g. with occupation, terminology may differ considerably across the world as may health service requirements. In this case it is always better to have local experts who can contribute to the expert panel. Once the data is analysed it is important to ensure that all participants have the opportunity to see, comment on and use the data, if this is not possible their feelings of ownership will be lost and the impetus to collect data in the future will be reduced. It is important to write up the findings of SDC projects and share them with other physiotherapists locally, regionally, nationally and/or internationally to maximise its usefulness. In particular it is

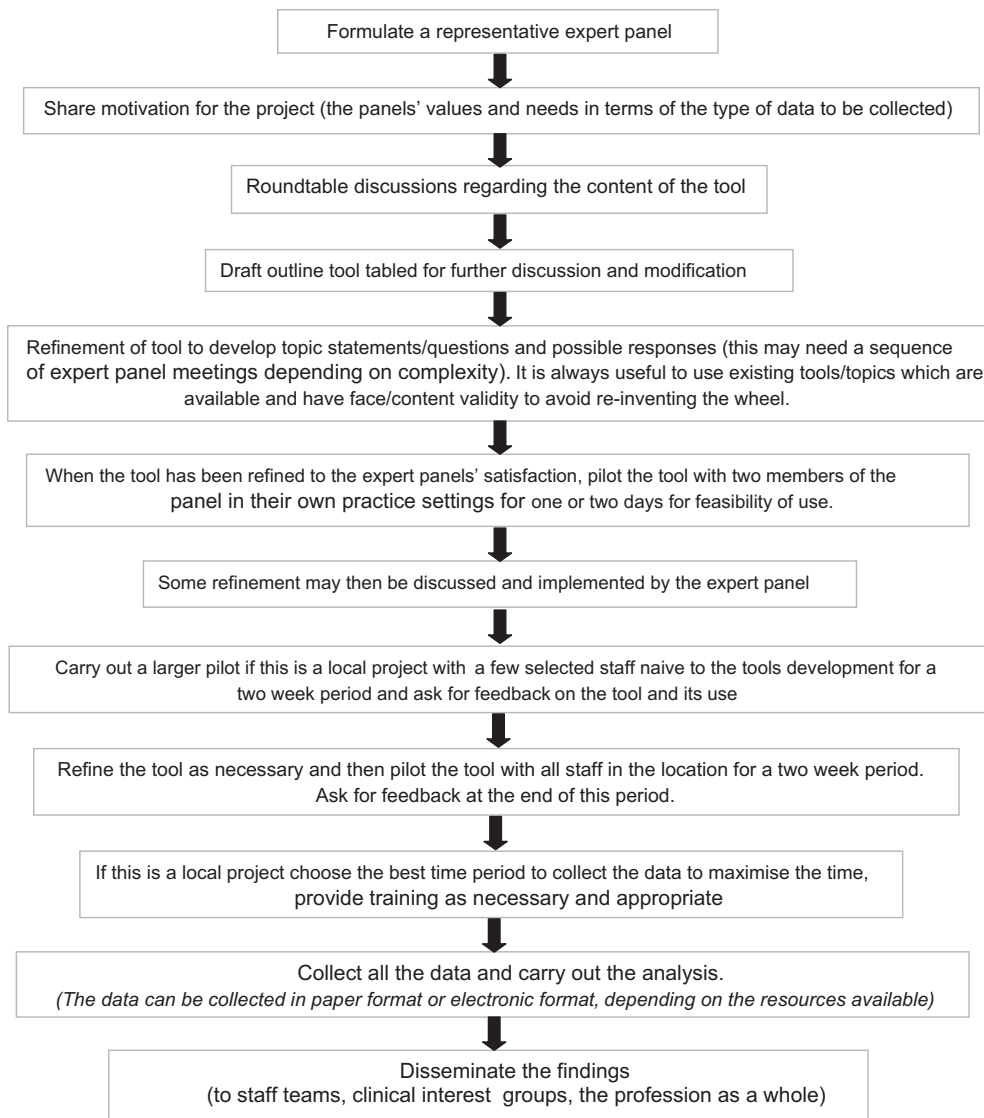


Fig. 1. Flow chart depicting the developmental process.

always useful to share the data if possible with your profession as a whole, particularly for benchmarking purposes.

This baseline data is very important for comparison of services, for identifying research questions and for a host of other reasons. If it is not shared, even locally, then the data does not live! It is lost and the individuals who have doggedly collected the data have in essence wasted their time. In many ways SDC can be utilised in several ways once a valid tool with face and content validity has been established. It may be used all the time to collect vital data required on a day to day basis (in this case the tool must be short and very easy to complete). In other cases it may be used for snapshot surveys e.g. with regards to a particular condition, a particular client group or a particular treatment approach. In this case the tool can be longer and more complex as it will likely not be used with every patient and therefore time issues/constraints are less likely to be a problem. Alternatively the SDC tool could be used within a research project to enable data collected to be standard across all participants and between all researchers, and could be used with a range of valid and reliable outcome measures.

The future of any health profession depends on its ability to justify and prove its existence is essential to patient care and to show that it delivers high quality care. The political challenges in

some countries are very great as economies are increasingly threatened and national health services are often the most expensive government financial outlay. All governments are increasingly looking to save money and cut investment in historically mainstream services, e.g. healthcare. Without proof of activity and success of activities some healthcare services may cease to function as a result of having their funding cut. It is essential that all services are able to justify their existence with good quality data that demonstrates the profile of what is being provided to the patient and the type of patients who are being treated i.e. are all the people who need physiotherapy outpatient department services actually accessing them? Are outcomes of consultations in line with what should be expected in terms of treatment modalities, return to work, numbers of treatments given and actual outcome of care?

Details of an example SDC project undertaken by private physiotherapy practitioners in the UK is shown in the [Appendix](#) to this article. This includes the development of the tool and some of the key findings.

9. Conclusion

The developmental approach to SDC and its implementation into UK physiotherapy services and in private practice are outlined

in this article. The future intention is to use this type of data collection tool more frequently, together with validated/reliable outcome measures, in order to provide information about efficiency and profile of physiotherapy services.

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Appendix

An example project – the development of an SDC tool for private physiotherapy practitioners in the UK

The project arose out of a desire of the Executive Committee of Physio First (the Organisation for Chartered Physiotherapists in Private Practice) to gain fuller information about current practice, patient demographics and outcome of care within physiotherapy private practices in the UK. The project was commissioned by the Private Physiotherapy Education Foundation (PPEF).

The objectives of the project were to:

- Develop a data collection tool acceptable for use by private physiotherapy practitioners;
- To develop a low cost electronic format to facilitate ease of data collection, storage and retrieval;
- To assess the feasibility of the use of the electronic tool in day to day practice;
- To carry out pilot data collection studies at local and regional levels within the UK;
- To carry out a national study utilising the developed tool for a six month period;
- To analyse and report on the data;
- To explore qualitatively the attitudes and perceptions of private practitioners towards SDC and its potential usage;

Process

A steering group consisting of experienced private practitioners, representatives from Physio First and PPEF, and the project team was responsible for overseeing the large scale project. This was seen to be important in relation to the overall success of the tool. The project received ethics approval from the University of Brighton, Faculty of Health's Research Ethics and Governance Committee. This was a collaborative project between Physio First, PPEF and the University of Brighton. The overall process for the development of the tool was as follows; a literature review was undertaken to ascertain if there were any existing tools or elements of tools that could be included in the development. In the absence of any appropriate tools, a tool previously developed by the first author (Moore, 1996) was used as a basis for consensus nominal group discussions. Sixteen private physiotherapy practitioners from different areas of the UK were recruited to participate in two focus group discussions. Prior to participating in the focus groups all practitioners received an information sheet providing details of the study and each signed a consent form.

The practitioners at each focus group discussed topic areas to be included in the tool and also possible standard responses. Following the discussions the identified topic areas and responses from both

groups were combined to form a single data collection tool and the tool was circulated to all the group members for comments. Following revision, the tool was then reviewed by the project steering group and again some minor revisions were made. The tool was reviewed once more by the practitioners from the focus groups, and as no more corrections were needed an electronic standardised data collection tool was developed by one the authors (GO).

Feasibility study

Following development of the electronic SDC three of the sixteen practitioners piloted the system over a 7 day period to explore the user friendliness of the tool. Each participant was provided with a laptop computer with the electronic SDC and was given a short training session on the system within their own practice. At the end of the seven day period the practitioners provided positive feedback, particularly regarding the ease and speed of entering data. They also gave useful suggestions for minor revisions to the tool for some of the standard responses. The electronic tool was subsequently adapted to incorporate the suggestions.

Pilot studies

Following the feasibility study the 16 private practitioners who participated in the original consensus group discussions piloted the electronic system within their own practices for a four month period. Each practitioner was provided with an electronic version of the tool, and was given a short training session on the system. At the end of the four month period the participants were interviewed in two focus groups of eight participants each to obtain feedback on the use of the system. Following these interviews some minor changes were made to the tool.

Regional pilot study

During this stage 60 private practitioners (10 from each of the six Physio First regions within the UK) were invited to pilot the electronic SDC tool for a two month period. This pilot study was planned to ascertain if any modifications to the tool were essential to reflect regional differences in language/demographics etc. All participating practitioners were sent the software via CD, together with a User Manual. Again some minor amendments were made to the tool following feedback from the practitioners.

National standardised data collection study

Having achieved agreement as to the content of the tool, the data collection system was made available to all Physio First members in the UK either electronically, or in paper format for data collection for all new patients over a three month period. The SDC tool comprised of 42 items including a range of topics related to patient details, demographics, physiotherapy diagnosis, body site and symptoms, weighting of physical & psychosocial factors, treatment details, outcomes of care, goal achievement at discharge, referral sources, reasons for choosing the practice etc.

147 private practitioners volunteered to participate in the national study. At the end of the three month period 4278 anonymised patient data sets were returned to the project team for analysis. Following the national study all participating practitioners were invited to provide feedback on the tool via an email questionnaire; additionally a random sample of 20 practitioners were invited to participate in follow up qualitative interviews to explore their perceptions of the use of SDC in their practices. The interviews were carried out on a 1-2-1 basis and the data was analysed thematically (the findings from this study are being published separately).

Follow on snapshot survey looking specifically at patients with whiplash injuries

In 2009 Physio First commissioned the University of Brighton to undertake a snapshot data collection survey looking specifically at patients with whiplash injuries. Using the previous tool as a baseline, once again the content of the tool was derived from a consensus

process. An electronic tool was developed which was piloted by three members of the steering group within their practice to explore the user friendliness of the tool. Having achieved agreement as to the content of the tool, the data collection system was made available to all Physio First members in the UK in electronic format for data collection over a two month period. The outline of the tool is shown in Fig. 2. Further details and coding of the tool are available from the first author (AM).

A STANDARDISED DATA COLLECTION TOOL FOR PHYSIOTHERAPY MANAGEMENT OF WHIPLASH AND WHIPLASH ASSOCIATED DISORDERS IN PRIVATE PRACTICE (2009)

PATIENT DETAILS											
Gender	<input type="checkbox"/>	Age	<input type="text"/>	Occupation code	<input type="text"/>	Self employed	<input type="checkbox"/>				
Employed: Full / Part time	<input type="checkbox"/>	Is the patient currently off work due to the present problem?			<input type="checkbox"/>	If yes, how long for? (in weeks)		<input type="text"/>	<input type="text"/>		
WAD classification / Quebec Taskforce	<input type="checkbox"/>	Is the patient's lifestyle sedentary, active or very active?			<input type="checkbox"/>	Is this patient registered as a disabled person?		<input type="checkbox"/>			
DIAGNOSIS											
Date of injury (if known)			<input type="text"/>	Date of onset of symptoms (if different to date of injury)			<input type="text"/>	Previous history of whiplash or WAD		<input type="checkbox"/>	
Acute / Chronic	<input type="checkbox"/>	Mechanism of injury	<input type="checkbox"/>	Laterality of symptoms	<input type="checkbox"/>	Present symptoms					
REFERRAL INFORMATION											
Referral source		<input type="checkbox"/>	Date of referral / self referral for treatment			<input type="text"/>	Diagnosis received from referring agent?			<input type="checkbox"/>	
Who is responsible for paying for the treatment?		<input type="checkbox"/>	Reasons for patient choosing this practice			<input type="checkbox"/>	Date of commencement of treatment			<input type="text"/>	
BODY SITE AND SYMPTOMS											
General body site				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Specific body site		<input type="checkbox"/>	
Origin of referred symptoms				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Symptomatic level on palpation		<input type="checkbox"/>	
Initial assessment of functional, physical and subjective outcomes				<input type="checkbox"/>	<input type="checkbox"/>	Length of initial examination & treatment				<input type="text"/>	
Weighting of physical and social factors				TREATMENT DETAILS							
(a) The problem				<input type="checkbox"/>	Modalities						
(b) Communication				<input type="checkbox"/>	Initial treatment						
(c) Mobility				<input type="checkbox"/>	1 st change						
(d) Psychosocial				<input type="checkbox"/>	2 nd change						
(e) Other conditions				<input type="checkbox"/>	3 rd change						
					4 th change						
					Education booklet or written information given to patient						
DEGREE OF DIFFICULTY IN TREATMENT OF THIS PATIENT											
Degree of difficulty in treatment of the patient		<input type="text"/>	Factors influencing the outcome of this treatment			<input type="text"/>	Factors affecting prognosis			<input type="text"/>	
DISCHARGE INFORMATION											
Final assessment of functional, physical and subjective outcomes				<input type="text"/>	Goal achievement at discharge		<input type="checkbox"/>	Outcome of referral		<input type="text"/>	
Date treatment terminated (last consultation)				<input type="text"/>	Number of treatments (this episode)		<input type="checkbox"/>	Number of therapists involved in treatment		<input type="checkbox"/>	
Average length of treatment sessions		<input type="checkbox"/>	Case activity over and above all treatment sessions								
			Phone calls		<input type="checkbox"/>	Emails		<input type="checkbox"/>	Letters		
			Insurance / legal documents		<input type="checkbox"/>						
Does the patient feel able to continue to / return to work?				<input type="checkbox"/>	Does the patient feel able to continue with / return to normal activities?						<input type="checkbox"/>

Fig. 2. A standardised data collection tool for physiotherapy management of whiplash.

Example findings from the whiplash snapshot survey by private physiotherapy practitioners in the UK

226 private practitioners agreed to participate in the national study, and at the end of the two month data collection period 129 practitioners returned patient data set for analysis. 716 anonymised patient data sets were returned to the project team for analysis. A summary of example findings are shown in Table 1.

Table 1
Example findings from the whiplash snapshot survey by private physiotherapy practitioners in the UK.

Topic area	Findings
Patient details	<ul style="list-style-type: none"> • 56% of patients were female; 44% male • The average age was 38.6 years (ranging from 8 to 84 years) • 70% of patients were in paid employment • 9% were off work due to their injury • 77% of patients did not have a previous history of whiplash or WAD
Service details	<ul style="list-style-type: none"> • The average waiting time (between referral date and commencement of treatment) was 6 days; the most frequently reported waiting time was 3 days • The number of treatments received ranged from 1 to 17 (depending on the severity and nature of the condition and the patients personal circumstances) • 92% of patients required eight treatments or less for the current episode prior to discharge • The number of treatments needed prior to discharge increased with age • 85% of patients received treatment from just one physiotherapist
Diagnosis	<ul style="list-style-type: none"> • 73% of patients were classified as WAD II (neck pain with physical signs) • The most frequently reported mechanism of injury was a rear impact transport incident (56%)
Body site & symptoms	<ul style="list-style-type: none"> • With regards to body site: 47% reported symptoms in the cervical spine with referred pain, and 34% reported symptoms in the cervical spine only. • The most predominant symptoms on examination were neck pain 61%, loss of movement 10%, referred pain 6%, headache 4% and sleep disturbance 2%.
Treatment details	<ul style="list-style-type: none"> • Initial treatment modalities:- Exercise & training eg: active mobilising exercises (36%); manual techniques (28%); education & advice (26%); electrotherapy (9%) and other (1%) • Subsequent treatment modalities:- Exercise & training (34%); manual techniques (36%); education & advice (16%); electrotherapy (13%) and other (1%)
Referral information	<ul style="list-style-type: none"> • 87% of patients were referred from 'private health/medical insurance companies' • For most patients (90%) the 'private health/medical insurance company' or 'insurance company' paid for the treatment
Discharge information	<ul style="list-style-type: none"> • The majority of therapist and patient agreed goals were achieved or exceeded at discharge. Only 5% of patients' goals were not achieved at discharge. • The most frequently reported outcome was "treatment completed – regular discharge" • The majority of patients were able to continue with or return to work. Only 1.5% of patients did not feel able to continue to or return to work.

The general qualitative feedback from the practitioners who trialled the data collection system was positive. Practitioners reported having a better understanding of what was going on in their practice, and were able to look at the success of their service delivery. It also gave practitioners the opportunity and motivation to reflect on their practice.

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